

sicians attending obstetrical cases, from the meticulous care of the obstetrician who turns the baby over to the pediatrician at birth down to the doctor who makes none, one, or two perfunctory calls only upon the parturient mother and never looks at the baby at all. Scott has done us all a service by directing our thought along these lines.

In my practice I still adhere most commonly to the three-hour feeding schedule for breast babies during the day, and the 2 a. m. nursing until the baby is two or three months of age.

It is well for us to remember that the breast produces for the next feeding just the amount which was taken out at the last nursing. Therefore, emptying the breast after baby nurses, preferably by manual expression, is valuable in obtaining and keeping a uniform production adequate to the increasing demands of the infant. We try to have each mother do this as a routine procedure after each nursing.

Formulae should not be given for complemental feedings before the lying-in period is over, as many patients immediately improve in breast function after being up and about again. Formulae are certainly advisable in preference to undernourished babies, but the physician should be the only one permitted to advise the formulae.

Prenatal care will pay large dividends in better mothers and babies; especially will it increase the number of mothers that can nurse their babies. With this and other objects in view, we place in the hands of every mother carefully selected books on "Prenatal Care," "Infant Care," and "Child Care," together with other reliable information. This is much appreciated by every patient, particularly the young woman who expects her first baby. Even experienced mothers appreciate instructions as to the care of themselves and the baby. All physicians should teach their patients these better things, not merely limiting their obstetrical care to the narrow field of attendance at labor.

Doctor Scott (closing) — Discussions always bring up important features and emphasize them.

Loomis' comments are timely, but do not leave the complemental feedings to a nurse, unsupervised.

If necessary to give additional feedings, work out a satisfactory schedule, and when it is not needed discontinue it. Don't prescribe it and forget all about it.

Syphilitic Bursitis — John E. Lane, New Haven, Conn. (Journal A. M. A.), reports two cases. In one patient both knees were affected. The pertinent points in her history were: Her husband had syphilis seven years before. Five years before that she had an ulcerated throat, ulcerations on the arms, and headaches; two years later, she had ulcerations on the legs. The diagnosis was bilateral syphilitic prepatellar bursitis. Arsphenamin was given with some improvement at first, but later the slow healing justified the surgical advice of excision of the bursae. In the second case the right elbow was affected. The only thing in the patient's history or that of his family suggesting syphilis was the story of ulcerations. He had received a blow on the right elbow two years before. Within two or three days, a swelling began to appear on the elbow. In the course of the next few weeks it gradually grew larger until it was about half the size of an egg, when it broke through the skin and began to discharge. A diagnosis of bursitis had been made before it broke down. From that time on, other ulcerations appeared in the vicinity, some persisting for a long time, new ones appearing as some of the older ones slowly and spontaneously healed. The diagnosis was: gummatous syphilitic olecranon bursitis; multiple syphilitic gummas and fibroid subcutaneous syphilomas. The patient was placed on anti-syphilitic treatment, with immediate improvement, and the lesions were completely healed in about eight weeks.

NARCISSE JOSEPH MARTINACHE, A REMARKABLE OPHTHALMOLOGIST*

By DOUGLASS W. MONTGOMERY, M. D.,
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Narcisse Joseph Martinache came to San Francisco, like many another, in hopes of acquiring a rapid fortune. Instead of this he lived a quiet, orderly life full of good works and kindnesses to those around him, and died leaving a good name and a modest competence.

It happened that I saw a good deal of him when I came to San Francisco in 1886. He was then over fifty years of age, and enjoyed a small but sufficient practice. He was not the kind of man to have a large one. In the first place, he was not a good propagandist; he was not at all showy and he loved to converse. It has been said that no man should be so addicted to work as to have no time to be polite, but it is remarkable how time flies during a friendly conversation. And in conversing with Martinache one picked up many things, for he was an excellent clinician, with the capacity both for seeing facts in their just proportion, and for applying the appropriate remedy. As far as seeing things was concerned, he had been trained in an excellent school, for the Parisian clinicians have always been noted for clarity of thought, the Latin lucidity joined with the tenacity of the Northern races. And as a school it is also noted for adhering to the definite study of the patient.

Before coming to San Francisco he had been chief of clinic for five years under De Wecker, probably the most famous oculist of his day, and collaborated with him on the Encyclopedia of Ophthalmology.

Martinache, however, was no mere hand workman striving to make his specialty a closed field. To illustrate: One day when coming down Mason street, between Post and Geary, I met Martinache. It is strange how an unimportant scene will fix itself in one's memory. I can recall his lineaments and figure distinctly as he came toward me. He was stockily built and rather slow and awkward-gaited; he could never have been a deft operator, although he was a careful one. He had a full beard and moustache, and he was dressed in black throughout—in a long black coat and a tall hat tipped a little back. He had a perfectly serene temper and a pleasant address devoid of self-consciousness or embarrassment, and he was very friendly. He gave the impression of solidity of character, worth and ability, but he was no Jupiter in the sense of being a cloud compeller.

He, of course, stopped to talk. I was then about twenty-eight years of age and he was over fifty. He spoke of the hypersensitiveness some people showed to the ingestion of certain foods, and more particularly of the case of a young girl who developed a pustular eruption from certain articles of diet. It was an instance of what we now recognize as anaphylaxis. I had recently returned from Europe, thoroughly imbued with the study of structural anatomy, and the then developing bacteriology, with

* Read before the Medical Society of the City and County of San Francisco, on the presentation by Dr. C. S. G. Nagel of a portrait of Dr. Martinache.

the attendant scholastic intolerance of any other branches of pathology.

As we parted my unexpressed opinion was that his observation had been incorrect, and that the patient's symptoms were due to some other cause, and not at all attributable to food. With this was probably associated the condescension of a young man towards any ideas of the elderly.

THE ACTUAL CAUTERY IN ULCER OF THE CORNEA

Martinache was the original discoverer of the use of the actual cautery in ulcer of the cornea. During his life his priority in this was disputed, in some instances acrimoniously, and very especially in medical literature by an oculist in Lyons, France. After three years this man acknowledged the priority of Martinache. Martinache would take any wire and heat it to a dull cherry-red in a spirit-lamp flame, and then draw it over the ulcer. Adolf Barkan tells me that for this purpose a strabismus hook is excellent, and, if heated to a cherry-red, the time consumed in carrying it from the flame to the patient's eye is just sufficient to allow the instrument to cool to the proper heat.

I have no doubt this discovery did Martinache a great deal of harm. Full use, to his detriment, was made by at least one of his confreres of this startling and apparently destructive procedure, and this unexpected result of a fine discovery is not without precedent in the history of medicine. It has its counterpart in the effect produced on the practice of Harvey on the announcement of the discovery of the circulation of the blood. Instead of increasing Harvey's reputation it caused a decided decrease in his practice, of which he bitterly complained.

Martinache was especially expert with the ophthalmoscope, and he had a notable case in the person of Hall McAllister. The great jurist had but one eye, which was beginning to give him trouble, presumably from its blemished brother. The findings of Martinache in this case secured a well-merited compliment from Knapp of New York, whom McAllister subsequently consulted.

In many ways Martinache had the art reduced almost to a science of impeding his material advantage. For instance, his office, 5 Kearny street, was reached by climbing two long flights of stairs, and the ceilings were high and the flights were long in those days, and there were no elevators. Mrs. Abbie Parrott, one of his most loyal patients, used to arrive panting, and would complain of his inaccessibility. "Why don't you get a more accessible office, doctor?" "Why should I, madam? You see, you come," was the Gallic response.

In the practice of his profession every medical man does his share toward helping his fellow-man as a matter of the day's work, never thinking of reward, and a strong, naturally benevolent nature with a well-trained mind, as in the case of Martinache, does more than his share. Some were grateful, others were thoughtless and a few were actively vindictive, as fearing a bill for the work done. The writer of one of the Gospels relates that Jesus cured ten lepers and one returned to thank him. In California 10 per cent is a rather high average of grati-

tude, even to the Deity, but it may have been different in Palestine.

But Martinache's beneficences did not end with his professional work. Louis Bazet relates that when he came to San Francisco he was urged to remain because it was a location particularly favorable for him, as knowing three languages—English, Spanish, and French. He sought Martinache's advice, who told him frankly that he would have a



NARCISSE JOSEPH MARTINACHE

"*Fortunatumque laborum egregiusque animi*" (Both fortunate in labors and noble of soul). Virgil, Aen. XI, 416.

long pull for it. When the resolution was taken, however, Martinache wrote out a check at the end of each month covering the deficit. This help endured for one year, at the end of which time Bazet was on his feet. It is needless to relate that Bazet has always cherished the deepest gratitude for his benefactor and friend.

Martinache was born in 1833 in the town of Hornaig (Departement du Nord), France, in what was formerly the Province of Picardie. He died December 23, 1892, in San Francisco, Calif.

The circumstances of his death are interesting to medical men. For some time before his death he had premonitory twitchings of the muscles of the left side of his face, and he resigned his position as oculist and aurist to the French Hospital in favor of Kaspar Pischel. He had been twenty years connected with this institution.

On the date above mentioned, on coming out of

his room, he suddenly pitched forward and all was over.

The autopsy showed sclerosis of the basilar artery, with a large spindle-shaped aneurism below it. The sclerosed artery was perfectly white, very thick and fibrous, and the lumen most minute. Arteriosclerosis was one of the subjects in which he was most deeply interested.

So passed away one of the most gentle of men, to enter the vast bosom of Nature, whose moods and ways it had been his greatest pleasure to study and observe.

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CARBON DIOXIDE COMBINING POWER OF BLOOD PLASMA IN PULMONARY TUBERCULOSIS *

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We are somewhat indebted to the work of McCann and Barr for their recent investigations upon respiratory metabolism, but this study does not parallel, as their carbon dioxide estimations were made entirely in terms of expired air. It might be well to reiterate a few salient facts relative to respiratory metabolism, and thereby make the scheme of reasoning a little more comprehensive. We know that in cases of advanced pulmonary tuberculosis the total pulmonary ventilation is approximately twice that of normal controls. We also know that the percentage of carbon dioxide produced and oxygen absorbed, in terms of expired air, is much reduced as compared with the normal.

It has been suggested that the increase in pulmonary ventilation was due to a reduction in the vital capacity of the tuberculous individual, but I feel that this reasoning is partially faulty, as they have not taken into consideration the para-sympathetic reflex (vagus), and also the fact that carbon dioxide in solution acts as an acid, and its effect upon the respiratory center must be accounted for. Assuming that the decrease in vital capacity is productive of increased pulmonary ventilation, we should then recall the disparities existing in vital capacities, depending upon the age period, height, and weight. Vital capacity markedly decreases after the thirty-fifth year, but there is an increase of eight cubic inches of air for each additional inch between five and six feet in height.

The increase of pulmonary ventilation will lower the percentage of carbon dioxide eliminated per unit time, but the total amount is found to be higher in the tuberculous than in the non-tuberculous controls. The amount of carbon dioxide eliminated in cc. per minute time is approximately 14 per cent greater in advanced tuberculosis than in the non-tuberculous.

Basal metabolism in tuberculosis has also been studied by Barbour, as well as McCann and Barr. Their determinations were made when the diurnal range of temperature was at its lowest, and only those cases which were extremely quiet during the test were considered basal. Basal metabolism im-

plies minimal metabolism, and this is what is sought. For each individual case the normal metabolism is the metabolism maintained during health, and the surface area in each case was determined from the height and weight, by the "height-weight" chart of Dubois & Dubois, or, in other words, the normal heat production per square meter of body surface was taken from these tables, and this takes into account the age. As the result of their work, they concluded that the basal metabolism in tuberculous patients may be normal or very slightly above that of normal men of the same size. Thus, in thirteen cases the variation was from a minus 3 to a plus 15 per cent.

Whitney has called attention to the very severe degrees of acidosis which may occur in the terminal stages of disease of whatever sort, often sufficient, apparently, to account for the death or to add seriously to the existing intoxication. Unfortunately, in the cases examined by him there were no typical cases of advanced pulmonary tuberculosis, but since anemia, terminal infections, and cardiac decompensation commonly exhibit marked terminal acidosis, it was to be expected that a final acidosis would exist in phthisis. The numerous studies on the subject of acidosis in various diseases also omit consideration of tuberculosis, except the inclusion of isolated cases which are of no significance.

Here it might be thought that, since carbon dioxide is a waste product of the oxidation process, the best possible condition would be its complete removal; but it has been clearly shown by Haldane that a definite minimal percentage of carbon dioxide is required for the regulation of the respiratory exchange; and that when the percentage is reduced by artificial ventilation, the subject passes into apnoea, or suspension of breathing, until the amount is brought back toward normal in the lungs and tissues. The normal amount of carbon dioxide in the alveolar spaces lies between 4 and 5 per cent, and, if it rises or falls but slightly from the normal, corresponding changes take place in the respiratory rhythm and depth, which tend to restore the balance once more. It has further been shown by Henderson that excessive and prolonged ventilation of the lungs by artificial means leads by lowering of the carbon dioxide concentration to irregularity of the heart beat, and finally, if pushed, to delirium cordis and death of the animal. Short of this limit, stoppage of the positive ventilation has the effect of restoring the heart to regular rhythm. Passing in the opposite direction, and observing the effects of increasing amounts of carbon dioxide, administered in artificial mixtures containing as high, or higher, amounts of oxygen as are present in atmospheric air so as to avoid asphyxiation from deficiency of oxygen, it was found that carbon dioxide has directly poisonous effects upon the bioplasm. Thus with 12 to 15 per cent of carbon dioxide and 20 to 25 per cent of oxygen, it is found that animals become somnolent, the urine will contain glucose, while with 20 to 25 per cent of carbon dioxide, even in presence of excess of oxygen, death rapidly occurs. The same effects are seen upon isolated tissues. Thus Waller has shown that the first effect of minimal traces of carbon dioxide is to increase the excitability of

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